Mapping FAQ

Q: Why is it necessary to map where current service exists?

A:

Broadband mapping is an important first step from a couple of perspectives. First and foremost, developing detailed service maps is a great way to organize and conduct a comprehensive inventory of service (by connection speed) across the entire state with a spotlight on where there are un-served or under-served areas. This core information helps to focus policymakers, community leaders, service providers and others on the central issue at hand: where is the existing digital divide and how can we best close that gap? The service maps are also an excellent first step in engaging all providers across the state in a joint effort to identify and solve an issue that is far larger than any one of them.

The ConnectingALABAMA approach takes great care to develop the maps in a way that protects the valuable business information enjoyed by each of the service providers. Also, having the ConnectingALABAMA broadband service maps on a website helps the citizens of Alabama (consumers and businesses) locate and register their service needs with the initiative and again, help ensure the focus on service gaps is maintained.

Q: …but don't service providers know where the gaps are?

A:

This is a complicated question. In many ways, the most important 'gap' is really a product of what a consumer wants and when they want it. On one level, a service provider certainly knows where they put equipment and what may be the maximum coverage that equipment can address. But they likely don't know much about the areas in which they do not have equipment deployed. If you think about this across dozens of providers, it becomes even harder for any individual ISP to know where service doesn't exist at all.

On a second level, consider that equipment is placed to satisfy an area's estimated demand. What happens from a demand perspective within that area will change over time. So for a wireline provider, there may have been adequate cable pairs to satisfy demand at one point—but if the area has grown, existing facilities may no longer be adequate. For the case of a wireless provider, maybe equipment, such as a repeater, needs to be added to support changes in how roads run, new traffic volumes or

trees which grew into an antenna path. Mapping where service is not available, as well as where people who don't have it want it, can help identify where facilities may need to be reinforced to provide adequate coverage.

In conclusion, putting all of these dynamic issues on one map helps providers (and policymakers) evaluate new service opportunities and isolate areas where coverage can be improved.

Q: How are these maps generated?

A:

The maps are developed based upon information received in provider surveys, market research and licensed data products. When we survey providers we receive information ranging from CAD (computer) files, engineering diagrams, and customer addresses to simple circles and lines drawn on highway maps. Based upon these different sources we put the data into a common geographic format (locate it on the Earth), then use a 100 meter sampling grid to understand the characteristics of deployed broadband of that grid. Then all the roads in that grid are labeled (e.g., color coded) the same way. The sampling grid helps us put the data in a common format for processing and control for error in submission or georeferencing.

To protect submitted, confidential information we use a second visualization grid to provide masking for provider confidential information. This imposes some intended uncertainty around the edges of service areas.

Q: What is being mapped?

A:

Both the state-wide maps and the underlying county maps provide a view of where service is provided, what speed is provided (within a range of speeds) and the technology deployed to provide service. There is also a state-level map that provides the advertised price range for the speed provided.

Q: How accurate are the maps?

A:

The accuracy is going to be a product of the accuracy of the incoming data as well as efforts to protect confidential information. We believe our masking of confidential information imposes error of about 500 meters for a given location. We also know that networks change over time and local conditions will vary from our engineering estimates.

Q: If I notice something wrong, how do I fix a mistake in the map?

A:

Please send us an email: our address is fix_maps@connectingalabama.com.

Q: I'm getting an error when I open the Adobe PDF. What should I do?

A:

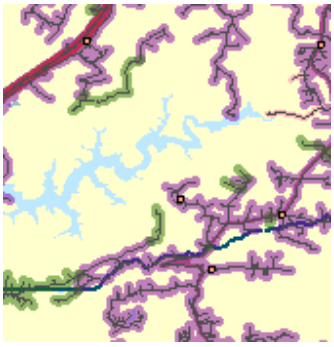
Most of these errors seem to be caused by opening the document before it is fully downloaded. Because these PDF files are large and complex, we have found that if you first save the PDF file onto your computer and then open it, the error goes away. If not, let us know the file name at the address above and we will work to fix the problem.

Q: I see something strange on my map, what is going on?

A:

We've been asked about situations like the image below. If you look at the top of the image, a road seems to shift from served (purple), underserved (green) and back to served. This is usually a product of several things.

First the visualization grid doesn't run parallel to a given road segment so it is likely that a portion of a road may wander from an area that is served into a grid in which service characteristics are different and then back into a served grid. Second, when a road branches it may be that one portion of the branch remains servable…because it's length is short enough to meet engineering estimates but another branch is too long. Finally the odd coverage may result from the combination of carrier coverage patterns. It may be that a fast Cable provider can't serve an entire road but a WISP can serve the remaining portion so the speed will change along the path. We've found a lot of reasons for these types of problems and they tend to occur mostly along the boundaries of coverage. When you see it we suggest stepping back and looking at the overall coverage pattern-the trend-in the nearby area. This may provide a better clue as to the quality of coverage or uncertainty of coverage in this boundary region.



Q: I see a hospital in the middle of a lake. Why is that?

A: Clearly this is a mistake. We are using public domain data sources, to minimize cost and licensing fees. Sometimes these data have not been error checked against other data layers. We are working to fix these problems, but it would be helpful to let us know if you see something strange. Please send us an email at fix_maps@connectingalabama.com.

Q: How are you defining served and underserved?

A:

We are trying to use a definition consistent with the NTIA/RUS NOFA. The NOFA used several composite characteristics in its definition. We used as follows

- Served – a road segment with 3Mb or better broadband service on it.
- Underserved – a road segment with 768 kbps to 3 Mbps service on it.
- Unserved – a road segment with 0-767 kbps service on it.

Q: What services did you consider in this study?

A:

We use most commercially available technologies for residences and businesses. This included xDSL, Cable DOCSIS, WISP, EVDO-A, UMTS/HSPA, BPL, FTTP, Internet over T1 and MetroE.

Q: With respect to mobile broadband, what services did you consider?

A:

We looked at the commercially deployed mobile broadband services and then filtered them on services which could consistently deliver above 768 kbps. This translated into use of EVDO-A, UMTS/HSPA and FLO. The table below describes our speed ranges by technology. The range highlighted in **blue** were used in this study.

CDMA/EVD0		**EVDO-A**		**HSPA**	
LowRange	High Range	**Low Range**	**High Range**	**Low Range**	**High Range**
50-100 kbps	400-700 kbps	**500-800kbps**	**600-1400 kbps**	**1800 kbps**	**10000 kbps**

Q: What are the sources of roads for this map?

A:

For the most part, we use US Census TIGER 2008 roads. In several counties (Baldwin, Montgomery, Shelby) we have used available locally provided data (e.g., from E911). We hope to integrate more locally derived data in the future.

Q: How did you get your pricing information?

A:

In many cases providers supplied us with their standard pricing information (sometimes in pricing tiers). If this wasn't supplied we used market research, web site reviews and tariffs to find prices. In many ways the pricing presents an apples and oranges analysis. In some cases broadband may not be available without a bundled voice or video service. In this case we used only the added cost over the base service. We did not include special offers, equipment costs or special time limited offers.

Q: Is there a way to view these maps online?

A:

Maps are currently available as layered PDFs (see www.connectingalabama.gov/ca/maps.aspx). We have scheduled online, dynamic maps by end of 2009.

Q: How frequently will the data change?

A:

Data is being provided and improved all the time – and we think this will continue for a while as we work with the provider community on the Alabama broadband mapping process. As a result, the maps are scheduled to be revised monthly thru the summer of 2009).

Q: How can I get the underlying data?

A:

The data is property of the State of Alabama and we are working on ways to efficiently disseminate it. Please contact Mark Guttman, 513-662-2124 x 102, to work out a distribution mechanism. Data are currently available in SHP format.